

IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION

Sonus Networks, Inc., d/b/a/ Ribbon
Communications Operating Company,

Plaintiff,

V.

Metaswitch Networks Ltd and
Metaswitch Networks Corporation,

Defendants.

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Case No. _____
JURY TRIAL DEMANDED

COMPLAINT

1. Plaintiff Sonus Networks, Inc. brings this complaint against Defendants Metaswitch Networks Ltd and Metaswitch Networks Corporation for infringement of five patents directed to softswitch and media gateway technology.

NATURE OF THE ACTION

2. This is an action for patent infringement arising under the patent laws of the United States, 35 U.S.C. § 1 *et seq.*, specifically including 35 U.S.C. § 271.

THE PARTIES

3. Plaintiff Sonus Networks, Inc. is a corporation organized under the laws of the State of Delaware and does business in Texas and across the United States as Ribbon Communications Operating Company (hereinafter “Ribbon”). Ribbon has a number of locations in the United States and has two regular and established places of business in this judicial district, which are located at 3605 East Plano Parkway, Plano, Texas 75074 and 1130 East Arapaho Road, Suite 200, Richardson, Texas 75081.

4. Defendant Metaswitch Networks Ltd is a company organized under the laws of the United Kingdom and has its principal place of business at 100 Church Street, Enfield, EN2 6BQ, United Kingdom.

5. Defendant Metaswitch Networks Corporation is a company organized under the laws of the State of Delaware and has its principal place of business at 11600 Sunrise Valley Drive, Reston, Virginia 20191.

6. Defendant Metaswitch Networks Ltd and Metaswitch Networks Corporation (collectively, “Metaswitch”) do business in Texas and across the United States as Metaswitch Networks. Defendants have a regular and established place of business in this judicial district, which is located at 2801 Network Boulevard, Suite 810, Frisco, Texas 75034.

JURISDICTION AND VENUE

7. This Court has subject-matter jurisdiction over this patent infringement action pursuant to 28 U.S.C. §§ 1331 and 1338(a).

8. Metaswitch is subject to personal jurisdiction in this judicial district. Metaswitch Networks Ltd and Metaswitch Networks Corp. are registered with the State of Texas to conduct business in Texas. In addition, Metaswitch regularly conducts business in Texas, including, but not necessarily limited to, offering for sale and selling products and services that, on information and belief, infringe one or more of Ribbon’s asserted patents to customers that are located in Texas or for use by customers in Texas. In addition, Metaswitch maintains a regular and established place of business in this judicial district.

9. Venue lies in this judicial district pursuant to 28 U.S.C. § 1400(b) for at least the reason that Metaswitch has a regular and established place of business in this judicial district, and, on information and belief, Metaswitch has committed acts of infringement in the State of Texas

and this judicial district, including but not necessarily limited to, offering for sale and selling products and services that infringe one or more of Ribbon's asserted patents to customers that are located in Texas or for use by customers in Texas.

THE ASSERTED PATENTS

10. U.S. Patent No. 6,381,238 (the "'238 Patent"), titled "System and Method to Internetwork Telecommunication Networks of Different Protocols," was issued by the United States Patent and Trademark Office ("USPTO") on April 30, 2002. Ribbon is the owner by assignment of the entire right, title and interest in and to the '238 Patent, including the sole and undivided right to sue for infringement. A true and correct copy of the '238 Patent is attached hereto as Exhibit A.

11. U.S. Patent No. 6,775,269 (the "'269 Patent"), titled "Method and System for Routing Telephone Calls between a Public Switched Telephone Network and an Internet Protocol Network," was issued by the USPTO on August 10, 2004. Ribbon is the owner by assignment of the entire right, title and interest in and to the '269 Patent, including the sole and undivided right to sue for infringement. A true and correct copy of the '269 Patent is attached hereto as Exhibit B.

12. U.S. Patent No. 6,950,441 (the "'441 Patent"), titled "System and Method to Internetwork Telecommunication Networks of Different Protocols," was issued by the USPTO on September 27, 2005. Ribbon is the owner by assignment of the entire right, title and interest in and to the '441 Patent, including the sole and undivided right to sue for infringement. A true and correct copy of the '441 Patent is attached hereto as Exhibit C.

13. U.S. Patent No. 6,961,334 (the "'334 Patent"), titled "Intelligence Engine," was issued by the USPTO on November 1, 2005. Ribbon is the owner by assignment of the entire

right, title and interest in and to the '334 Patent, including the sole and undivided right to sue for infringement. A true and correct copy of the '334 Patent is attached hereto as Exhibit D.

14. U.S. Patent No. 7,158,627 (the "'627 Patent"), titled "Method and System for Inhibiting Softswitch Overload," was issued by the USPTO on January 2, 2007. Ribbon is the owner by assignment of the entire right, title and interest in and to the '627 Patent, including the sole and undivided right to sue for infringement. A true and correct copy of the '627 Patent is attached hereto as Exhibit E.

15. The '238 Patent, '269 Patent, '441 Patent, '334 Patent, and '627 Patent are referred to herein collectively as the asserted patents.

BACKGROUND OF THE DISPUTE

16. Sonus Networks, Inc. is a wholly owned subsidiary of Ribbon Communications, Inc., which is a publicly traded company that is listed on the NASDAQ Exchange. Ribbon has two decades of leadership in real-time communications. Built on world-class technology and intellectual property, Ribbon delivers intelligent, secure, embedded real-time communications. Ribbon transforms fixed, mobile and enterprise networks from legacy environments to secure IP and cloud-based architectures that enable highly productive communications for consumers and businesses. Ribbon offers a complete portfolio of industry-leading and widely-deployed products, including Session Border Controllers (SBCs), Call Controllers, Media Gateways, Application Server, Diameter Signaling Controllers (DSCs), policy/routing servers, Signaling Gateways, mobile core solutions and network security and analytics. A large portion of the portfolio is available for deployment in-network or in virtualized cloud environments via software.

17. Metaswitch offers for sale, sells, and imports into the United States products that compete with Ribbon's portfolio, such as Metaswitch's Integrated Softswitches (e.g., VP6010 and

VP6050), Universal Media Gateways (e.g., MG6010 and MG6050) and Metaswitch Telephony Application Server (MTAS) (collectively “accused products”). Metaswitch’s accused products infringe one or more of the asserted patents, as described in more detail below.

PATENT INFRINGEMENT CLAIMS

Count I – Infringement of U.S. Patent No. 6,381,238

18. Ribbon incorporates by reference the allegations in the foregoing paragraphs.

19. The ’238 Patent is directed to a telephony gateway that connects a circuit network with a packet network, and includes a packet switch fabric, a circuit network server, a packet network server and a signal processing server. *See* ’238 Patent, Abstract. The claimed systems and methods of the ’238 Patent improve the operation of connecting circuit networks with packet networks using techniques that were not well-understood, routine, or conventional to a person of ordinary skill in the art at the time of the ’238 Patent. For example, prior systems used a circuit switched fabric, or separate and independent circuit switched and packet switched fabrics, which are inflexible or overly costly and complex. *Id.* at 1:47-49, 2:7-11.

20. Metaswitch has known of the ’238 Patent at least as early as service of this Complaint.

21. On information and belief, Metaswitch and its customers directly infringes one or more claims of the ’238 Patent, either literally or under the doctrine of equivalents. Non-limiting examples of such infringement are provided below, based on the limited information currently available to Ribbon.

22. Claim 1 of the ’238 Patent recites as follows:

A system for connecting a circuit network with a packet network, the system comprising:

a packet switch fabric;

a circuit network server having a first port for sending and receiving circuit-based signals with the circuit network, the circuit network server having a digital signal processor for providing packet adaptation and a second port for sending and receiving packet-based signals having packets with the packet switch fabric;

a packet network server having a first port for sending and receiving packet-based signals with the packet switch fabric and a second port for sending and receiving packet-based signals with the packet network; and

a signal processing server having a port for sending and receiving packet-based signals with the packet switch fabric, the signal processing server having a digital signal processor for performing signal processing on the packet-based signals;

wherein the packet switch fabric transfers packet-based signals among the packet network server, the signal processing server, and the circuit network server.

23. Upon information and belief, at least Metaswitch's gateway products, such as its Integrated Softswitches (e.g., its VP6010 and VP6050 products) and its Universal Media Gateways (UMGs) (e.g., its MG6010 or MG6050 products), satisfy each and every limitation of at least Claim 1. An example is described below.

24. The gateway products are operable to connect a circuit network with a packet network. For example, the UMGs feature "an integrated signaling gateway, designed to transform circuit switched SS7 and ISDN messages for IP networks." Exhibit F, MG6050 Universal Media Gateway (2017), *available at* <http://info.metaswitch.com/hs-fs/hub/415294/file-1797525720-pdf/PDFs/Metaswitch-Universal-Media-Gateway-MG6050.pdf>, at 1; Exhibit G, MG6010 Universal Media Gateway (2017), *available at* <http://www.metaswitch.com/knowledge-center/datasheets/mg6010-universal-media-gateway-datasheet>, at 1. The UMGs support the following protocols.

PROTOCOLS

- Media Gateway Control: H.248 v1 and v2 / Megaco, MGCP 1.0bis
- Internet Protocol version 6 (IPv6) and Internet Protocol version 4 (IPv4)
- Session Initiation Protocol (SIP) v2
- T1 Channel Associated Signaling (CAS)
- SS7 Support: ANSI, ITU-T, ETSI and national variants
- ISDN PRI (ETSI, NI-2, Lucent and Nortel variants), NFAS
- PacketCable Network-based Call Signaling (NCS)
- GR-303
- TR-08 *
- Multi-Frequency (MF) trunks (1-way, 2-way)
- Ground start, loop start, E&M immediate/wink start
- V5.2 signaling *
- SIGTRAN (M2UA, M3UA and IUA) backhaul to gateway controller

25. The Integrated Softswitches “can be deployed as a signaling gateway, enabling cost-effective termination of SS7 signaling links anywhere within the network and transport of ISDN signaling messages . . . over IP. Exhibit H, VP6050 Integrated Softswitch (2014), *available at* <http://www.metaswitch.com/knowledge-center/datasheets/vp6050-integrated-softswitch-datasheet>, at 1; Exhibit I, *VP6010 Integrated Softswitch* (2014), *available at* <http://www.metaswitch.com/knowledge-center/datasheets/vp6010-integrated-softswitch-datasheet>, at 1. The Integrated Softswitches support the following protocols.

PROTOCOLS

- Media Gateway Control: H.248 v1 and v2 / Megaco, MGCP 1.0bis
- Signaling Gateway Control: M3UA and M2PA
- Internet Protocol version 6 (IPv6) and Internet Protocol version 4 (IPv4)
- Session Initiation Protocol (SIP) v2
- T1 Channel Associated Signaling (CAS)
- SS7 Support: ANSI, ITU-T, ETSI and national variants
- ISDN PRI (ETSI, NI-2, Lucent and Nortel variants), NFAS
- PacketCable Network-based Call Signaling (NCS)
- GR-303
- Multi-Frequency (MF) trunks (1-way, 2-way)
- Ground start, loop start, E&M immediate/wink start
- V5.2 signaling

26. The gateway products include a packet switch fabric. For example, the UMG architecture includes the following components. Exhibits F and G, at 2.

SYSTEM ARCHITECTURE

- Up to 12 DX6730 Universal Media Gateway Resource blades (in 1:1 redundant pairs)
- One pair of rear transition modules for each redundant pair of blades: one of RT6701, RT6703 or RT6705, depending on connectivity requirements. Each pair of resource blades can use a different rear transition module, for varied connectivity.
- CB1000 and CB3000 breakout panels for connecting T1/E1 and DS3 connections on the MG6050 to the network
- 2 SX6100 Ethernet switch blades
- 2 SMC6050 chassis shelf managers
- Timing: BITS, TDM carrier (T1/E1, DS3 or SDH/SONET) or internal clock source (stratum 3)

27. And the Integrated Softswitch architecture includes the following components. Exhibits H and I, at 2.

SYSTEM ARCHITECTURE

- Up to 12 DX6730 Universal Media Gateway Resource blades (in 1:1 redundant pairs)
- One pair of rear transition modules for each redundant pair of blades: one of RT6701, RT6703 or RT6705, depending on connectivity requirements. Each pair of resource blades can use a different rear transition module, for varied connectivity.
- CB1000 and CB3000 breakout panels for connecting T1/E1 and DS3 connections on the VP6050 to the network
- 2 SX6100 Ethernet switch blades
- 2 SMC6050 chassis shelf managers
- Timing: BITS, TDM carrier (T1/E1, DS3 or SDH/SONET) or internal clock source (stratum 3)

CLASS-LEADING SCALABILITY

With a single chassis starting from zero to 100,000 subscribers at 400,000 BHCA and growing to a maximum of 600,000 subscribers at 2.4M BHCA, the VP6050 can scale to meet the demands of the largest carrier networks. The VP6050 is built on a 14-slot commercial off-the-shelf (COTS) ATCA open modular computing platform that features a dual-star PICMG 3.1 compliant 10 Gigabit Ethernet fabric. This native, non-blocking, packet-based backplane delivers dual 10GbE to each interface card and avoids unnecessary VoIP decode encode operations for maximum voice quality.

28. The Integrated Softswitches include SX6100 ethernet switch blades and gateway resources on the DX6730 UMG Resource blades connected via a 10 Gigabit Ethernet fabric backplane that alone or in combination comprise a packet switch fabric. Similarly, the UMGs include SX6100 ethernet switch blades and gateway resources on the DX6730 UMG Resource blades connected via a backplane that alone or in combination comprise a packet switch fabric.

29. The gateway products include circuit switched time division multiplexing (TDM) interfaces. Exhibits F through I, at 2.

NETWORK INTERFACES

- TDM: T1/E1, DS3, OC3/STM1, OC12/STM4
- VoIP: Auto-detecting Fast/Gigabit/10GE Ethernet
- Management: Ethernet and serial console access

30. The circuit switched TDM interfaces along with their controlling hardware and software on the rear transmission modules DX6730 and/or shelf managers SMC6050 comprise a circuit network server.

31. The DX6730 resource cards include codecs and digital signal processors for performing transcoding and packet adaption. Exhibits F through I, at 2.

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| <p>CODECS</p> <ul style="list-style-type: none"> • G.711 (64kbps PCM) • G.726 (32kbps ADPCM) • G.729AB (8kbps CS-ACELP) • G.722 (WB) • G.722.2 (AMR-WB) • AMR • EVRC • EVRC-B • GSM-HR • GSM-FR • GSM-EFR • iLBC • Automatic fallback to G.711 for fax/modem calls • Clearmode pseudo-codec for 64kbps data calls • T.38 Fax Relay |
| <p>MEDIA AND QUALITY OF SERVICE</p> <ul style="list-style-type: none"> • QoS: IP Differentiated Services (DiffServ) with 802.1p prioritized weighted fair queuing • Echo cancellation: G.165, G.168 (up to 128ms) • Idle channel suppression • Silence suppression and comfort noise generation • Tone generation / detection (DTMF, MF, FSK) • Onboard mixing and announcement server |

| |
|---|
| <p>CODECS</p> <ul style="list-style-type: none"> • G.711 (64kbps PCM) • G.726 (32kbps ADPCM) • G.729AB (8kbps CS-ACELP) • G.722 (WB) • G.722.2 (AMR-WB) • AMR-NB • EVRC • EVRC-B • iLBC • Automatic fallback to G.711 for fax/modem calls • T.38 Fax Relay |
| <p>MEDIA AND QUALITY OF SERVICE</p> <ul style="list-style-type: none"> • QoS: IP Differentiated Services (DiffServ) with 802.1p prioritized weighted fair queuing • Echo cancellation: G.165, G.168 (up to 128ms) • Idle channel suppression • Silence suppression and comfort noise generation • Tone generation / detection (DTMF, MF, FSK) • Onboard mixing and announcement server |

32. The gateway products include packet interfaces (e.g., Ethernet). Exhibits F through I, at 2. The packet interfaces along with their controlling hardware and software on the DX6730 and/or SMC6050 comprise a packet network server.

33. The gateway products include a signal processing server having a port for sending and receiving packet-based signals with the packet switch fabric and having a digital signal processor for performing signal processing on the packet-based signals. For example, the DX6730 resource cards include codecs and digital signal processors for performing signal processing. The controlling hardware and software on the DX6730 and SMC6050 comprise a signal processing server. Exhibits F through I, at 2.

34. In view of the foregoing, the Metaswitch gateway products directly infringe the '238 Patent in violation of 35 U.S.C. § 271(a).

35. On information and belief, both by configuring the gateway products to operate in a manner that infringes the '238 Patent and by encouraging customers to use the gateway products in a manner that infringes the '238 Patent, Metaswitch is inducing infringement of the '238 Patent by its customers in violation of 35 U.S.C. § 271(b). For example, Metaswitch's marketing literature describes functionality of the gateway products that falls within the scope of the above-identified claim of the '238 Patent.

36. Ribbon has no adequate remedy at law for Metaswitch's acts of infringement. As a direct and proximate result of Metaswitch's acts of infringement, Ribbon has suffered and continues to suffer damages and irreparable harm. Unless Metaswitch's acts of infringement are enjoined by this Court, Ribbon will continue to be damaged and irreparably harmed.

Count II – Infringement of U.S. Patent No. 6,775,269

37. Ribbon incorporates by reference the allegations in the foregoing paragraphs.

38. The '269 Patent is directed to routing a telephone call originating at a first network that utilizes a first signaling protocol to a termination in a second network that uses a second signaling protocol. *See* '269 Patent, Abstract. Determining the route for processing the request over the second network includes determining an address for the calling party and accessing a table associated with the address. *Id.* The table includes a plurality of pointers to a plurality of additional tables. *Id.* The claimed systems and methods of the '269 Patent improve the operation of a softswitch using techniques that were not well-understood, routine, or conventional to a person of ordinary skill in the art at the time of the '269 Patent. For example, particular embodiments facilitate call routing through a plurality of nested tables, which are modifiable to modify a customer's services. *Id.* at 3:19-21.

39. Metaswitch has known of the '269 Patent at least as early as service of this Complaint.

40. On information and belief, Metaswitch and its customers directly infringe one or more claims of the '269 Patent, either literally or under the doctrine of equivalents. Non-limiting examples of such infringement are provided below, based on the limited information currently available to Ribbon.

41. Claim 1 of the '269 Patent recites as follows:

A method for routing a telephone call originating at a first network that utilizes a first signaling protocol to a termination in a second network that uses a second signaling protocol comprising:

receiving a service request associated with a calling party from the first network;

translating the service request;

determining a route for processing the service request over the second network;

generating signaling specifying the determined route; and
 wherein determining the route for processing the request over the second network comprises:

determining an address for the calling party;
 accessing a table associated with the address, the table comprising a plurality of pointers to a plurality of additional tables;
 accessing at least one of the additional tables specified by at least one of the pointers; and
 in response to accessing the at least one of the additional tables, determining the route for processing the request based on the at least one of the additional tables.

42. Upon information and belief, Metaswitch and its customers practice each and every limitation of at least Claim 1 when using Metaswitch's softswitch products, such as its Integrated Softswitches (e.g., its VP6010 and VP6050 products) and Distributed Softswitches (e.g., its Metaswitch Telephony Application Server (MTAS) combined with the MG6010 or MG6050 Universal Media Gateways (UMGs)). An example is described below.

43. The softswitch products are operable to route a telephone call originating at a first network that utilizes a first signaling protocol to a termination in a second network that uses a second signaling protocol. For example, the UMGs feature "an integrated signaling gateway, designed to transform circuit switched SS7 and ISDN messages for IP networks." Exhibits F and G, at 1. The UMGs support the following protocols.

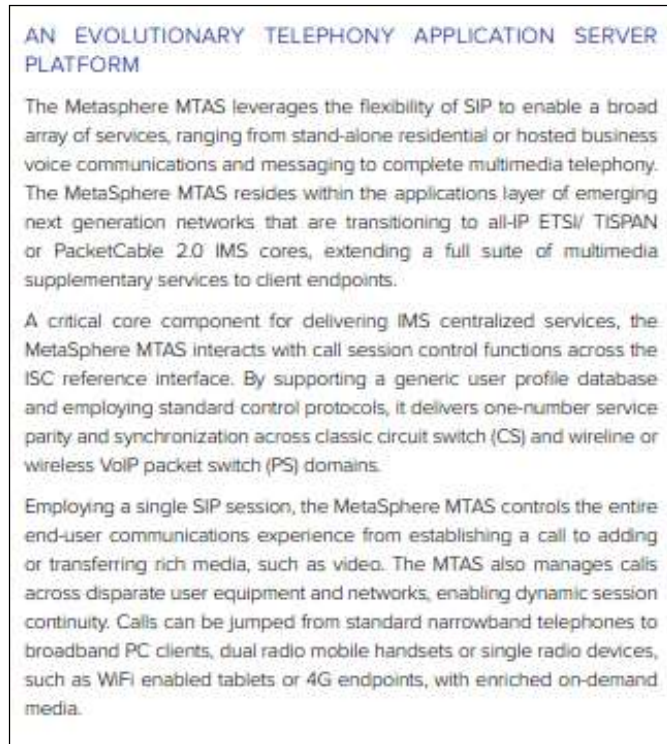
PROTOCOLS

- Media Gateway Control: H.248 v1 and v2 / Megaco, MGCP 1.0bis
- Internet Protocol version 6 (IPv6) and Internet Protocol version 4 (IPv4)
- Session Initiation Protocol (SIP) v2
- T1 Channel Associated Signaling (CAS)
- SS7 Support: ANSI, ITU-T, ETSI and national variants
- ISDN PRI (ETSI, NI-2, Lucent and Nortel variants), NFAS
- PacketCable Network-based Call Signaling (NCS)
- GR-303
- TR-08 *
- Multi-Frequency (MF) trunks (1-way, 2-way)
- Ground start, loop start, E&M immediate/wink start
- V5.2 signaling *
- SIGTRAN (M2UA, M3UA and IUA) backhaul to gateway controller

44. The Integrated Softswitches “can be deployed as a signaling gateway, enabling cost-effective termination of SS7 signaling links anywhere within the network and transport of ISDN signaling messages . . . over IP.” Exhibits H and I, at 1. The Integrated Softswitches support the following protocols.

| PROTOCOLS |
|---|
| <ul style="list-style-type: none"> • Media Gateway Control: H.248 v1 and v2 / Megaco, MGCP 1.0bis • Signaling Gateway Control: M3UA and M2PA • Internet Protocol version 6 (IPv6) and Internet Protocol version 4 (IPv4) • Session Initiation Protocol (SIP) v2 • T1 Channel Associated Signaling (CAS) • SS7 Support: ANSI, ITU-T, ETSI and national variants • ISDN PRI (ETSI, NI-2, Lucent and Nortel variants), NFAS • PacketCable Network-based Call Signaling (NCS) • GR-303 • Multi-Frequency (MF) trunks (1-way, 2-way) • Ground start, loop start, E&M immediate/wink start • V5.2 signaling |

45. The MTAS communicates with a UMG to control “the entire end-user communications experience from establishing a call to adding or transferring rich media, such as video” and manages calls “across disparate user equipment and networks.” Exhibit J, Metasphere MTAS Multiservice Telephony Application Server (2017), *available at* <http://www.metaswitch.com/knowledge-center/datasheets/metasphe-mtas-multiservice-telephony-application-server-datasheet>, at 1.



46. Similarly, the Integrated Softswitches provide full Class 4 and 5 calling functionality. Exhibits H and I, at 1-2.

47. The softswitch products receive a service request associated with a calling party from the first network and translate the service request to determine a route over the second network. For example, as described above, the softswitch products manage calls between a circuit switched and packet switched network. Thus, the softswitch products receive a service request associated with a calling party and translate the service request to route the call over the second network as part of establishing the call. The supported protocols (e.g., SIP, SS7) include an address for the calling party in the call establishment messages.

48. The softswitch products determine a route over the second network using a plurality of tables. Because the softswitch products provide Class 4 and 5 calling functionality, on information and belief the Softswitch products include routing and translation tables. Exhibits H through J, at 2.

49. In view of the foregoing, Metaswitch and its customers infringe the '269 Patent in violation of 35 U.S.C. § 271(a).

50. On information and belief, both by configuring the softswitch products to operate in a manner that infringes the '269 Patent and by encouraging customers to use the softswitch products in a manner that infringes the '269 Patent, Metaswitch is inducing infringement of the '269 Patent by its customers in violation of 35 U.S.C. § 271(b). For example, Metaswitch's marketing literature describes functionality of the softswitch products that falls within the scope of the above-identified claim of the '269 Patent.

51. Ribbon has no adequate remedy at law for Metaswitch's acts of infringement. As a direct and proximate result of Metaswitch's acts of infringement, Ribbon has suffered and continues to suffer damages and irreparable harm. Unless Metaswitch's acts of infringement are enjoined by this Court, Ribbon will continue to be damaged and irreparably harmed.

Count III – Infringement of U.S. Patent No. 6,950,441

52. Ribbon incorporates by reference the allegations in the foregoing paragraphs.

53. The '441 Patent is directed to a softswitch interconnecting networks of different transport protocols. *See* '441 Patent, Abstract. The softswitch includes a signaling agent coupled to the networks and operable to receive incoming signaling messages, translate the incoming signaling messages to a call model event, and route the call model event. *Id.* The softswitch further includes a call agent in communication with the signaling agent and operable to receive the call model event, request outgoing resources for establishing data sessions, generate outgoing signaling messages, and send the outgoing signaling messages to the signaling agent. *Id.* The claimed systems and methods of the '441 Patent improve the operation of a softswitch using techniques that were not well-understood, routine, or conventional to a person of ordinary skill in

the art at the time of the '441 Patent. For example, particular embodiments facilitate cost reduction of telephony services, interoperability of the Internet central office and residential service gateway using any broadband Internet technology so that service is portable from one transport to another, geographic portability of a user's telephone to any location, and extensibility a local exchange carrier's telephony network into the broadband user's premise without investment in broadband technology. *Id.* at 5:27-44.

54. Metaswitch has known of the '441 Patent at least as early as service of this Complaint.

55. On information and belief, Metaswitch and its customers directly infringe one or more claims of the '441 Patent, either literally or under the doctrine of equivalents. Non-limiting examples of such infringement are provided below, based on the limited information currently available to Ribbon.

56. Claim 1 of the '441 Patent recites as follows:

A softswitch interconnecting networks of different transport protocols, comprising:
a signaling agent coupled to the networks and operable to receive incoming signaling messages, translate the incoming signaling messages to a call model event, and route the call model event; and
a call agent in communication with the signaling agent and operable to receive the call model event, request outgoing resources for establishing data sessions, generate outgoing signaling messages, and send the outgoing signaling messages to the signaling agent, the signaling agent further terminating the data sessions on the requested outgoing resources; and
further comprising a network directory server operable to receive requests for routing information to establish data sessions from the call agent, and provide routing information to the call agent.

57. Upon information and belief, at least Metaswitch's softswitch products, such as its Integrated Softswitches (e.g., its VP6010 and VP6050 products) and Distributed Softswitches (e.g., its Metaswitch Telephony Application Server (MTAS) combined with the MG6010 or

MG6050 Universal Media Gateways (UMGs)), satisfy each and every limitation of at least Claim 1. An example is described below.

58. The softswitch products include a signaling agent. For example, the UMGs feature “an integrated signaling gateway, designed to transform circuit switched SS7 and ISDN messages for IP networks.” Exhibits F and G, at 1. The Integrated Softswitches “can be deployed as a signaling gateway, enabling cost-effective termination of SS7 signaling links anywhere within the network and transport of ISDN signaling messages . . . over IP.” Exhibits H and I, at 1.

59. The softswitch products include a call agent. For example, the MTAS communicates with a UMG to control “the entire end-user communications experience from establishing a call to adding or transferring rich media, such as video” and manages calls “across disparate user equipment and networks.” Exhibit J, at 1.

AN EVOLUTIONARY TELEPHONY APPLICATION SERVER PLATFORM

The Metasphere MTAS leverages the flexibility of SIP to enable a broad array of services, ranging from stand-alone residential or hosted business voice communications and messaging to complete multimedia telephony. The MetaSphere MTAS resides within the applications layer of emerging next generation networks that are transitioning to all-IP ETSI/ TISPAN or PacketCable 2.0 IMS cores, extending a full suite of multimedia supplementary services to client endpoints.

A critical core component for delivering IMS centralized services, the MetaSphere MTAS interacts with call session control functions across the ISC reference interface. By supporting a generic user profile database and employing standard control protocols, it delivers one-number service parity and synchronization across classic circuit switch (CS) and wireline or wireless VoIP packet switch (PS) domains.

Employing a single SIP session, the MetaSphere MTAS controls the entire end-user communications experience from establishing a call to adding or transferring rich media, such as video. The MTAS also manages calls across disparate user equipment and networks, enabling dynamic session continuity. Calls can be jumped from standard narrowband telephones to broadband PC clients, dual radio mobile handsets or single radio devices, such as WiFi enabled tablets or 4G endpoints, with enriched on-demand media.

60. Similarly, the Integrated Softswitches provide full Class 4 and 5 calling functionality. Exhibits H and I, at 1-2.

61. The softswitch products include a directory server for receiving requests for and providing routing information. Because the softswitch products provide Class 4 and 5 calling functionality, on information and belief the Softswitch products include routing and translation tables comprising a directory server. Exhibits H through J, at 2.

62. In view of the foregoing, Metaswitch and its customers directly infringe the '441 Patent in violation of 35 U.S.C. § 271(a).

63. On information and belief, both by configuring the softswitch products to operate in a manner that infringes the '441 Patent and by encouraging customers to use the softswitch products in a manner that infringes the '441 Patent, Metaswitch is inducing infringement of the '441 Patent by its customers in violation of 35 U.S.C. § 271(b). For example, Metaswitch's marketing literature describes functionality of the softswitch products that falls within the scope of the above-identified claims of the '441 Patent.

64. Ribbon has no adequate remedy at law for Metaswitch's acts of infringement. As a direct and proximate result of Metaswitch's acts of infringement, Ribbon has suffered and continues to suffer damages and irreparable harm. Unless Metaswitch's acts of infringement are enjoined by this Court, Ribbon will continue to be damaged and irreparably harmed.

Count IV – Infringement of U.S. Patent No. 6,961,334

65. Ribbon incorporates by reference the allegations in the foregoing paragraphs.

66. The '334 Patent is directed to an intelligence engine that communicates with at least one call agent in a telecommunications network. *See* '334 Patent, Abstract. The intelligence engine may receive an indicator signal associated with a call and access a database entry associated

with a call agent in response to the indicator signal and to reassign control of the call from the call agent to a second call agent. *Id.* The claimed systems and methods of the '334 Patent improve the operation of a packet network using techniques that were not well-understood, routine, or conventional to a person of ordinary skill in the art at the time of the '334 Patent. For example, particular embodiments facilitate management command and control should a controller for one region fail or otherwise malfunction such that traffic is rerouted to another controller without disrupting other networks. *Id.* at 3:65-4:7.

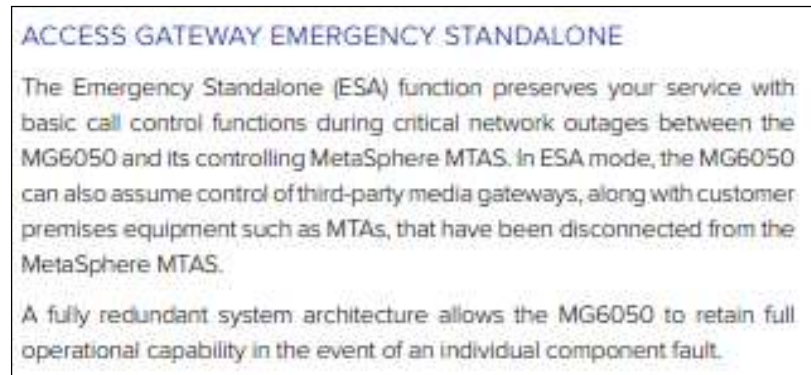
67. On information and belief, Metaswitch and its customers directly infringe one or more claims of the '334 Patent, either literally or under the doctrine of equivalents. Non-limiting examples of such infringement are provided below, based on the limited information currently available to Ribbon.

68. Claim 1 of the '334 Patent recites as follows:

A method for managing a packet network, comprising:
receiving an indicator signal associated with time-sensitive data traffic in a network, the traffic controlled by a call agent;
accessing a database entry associated with the call agent in response to the indicator signal; and
reassigning control of the data traffic from the call agent to a second call agent, wherein reassigning comprises changing the database entry from an IP address associated with the call agent to a second IP address associated with the second call agent.

69. On information and belief, Metaswitch and its customers practice each and every limitation of at least Claim 1 when using Metaswitch's gateway products (e.g., its MG6010 or MG6050 Universal Media Gateways (UMGs)), and its gateway products in combination with its clustered Metaswitch Telephony Application Server (MTAS). Some examples are described below.

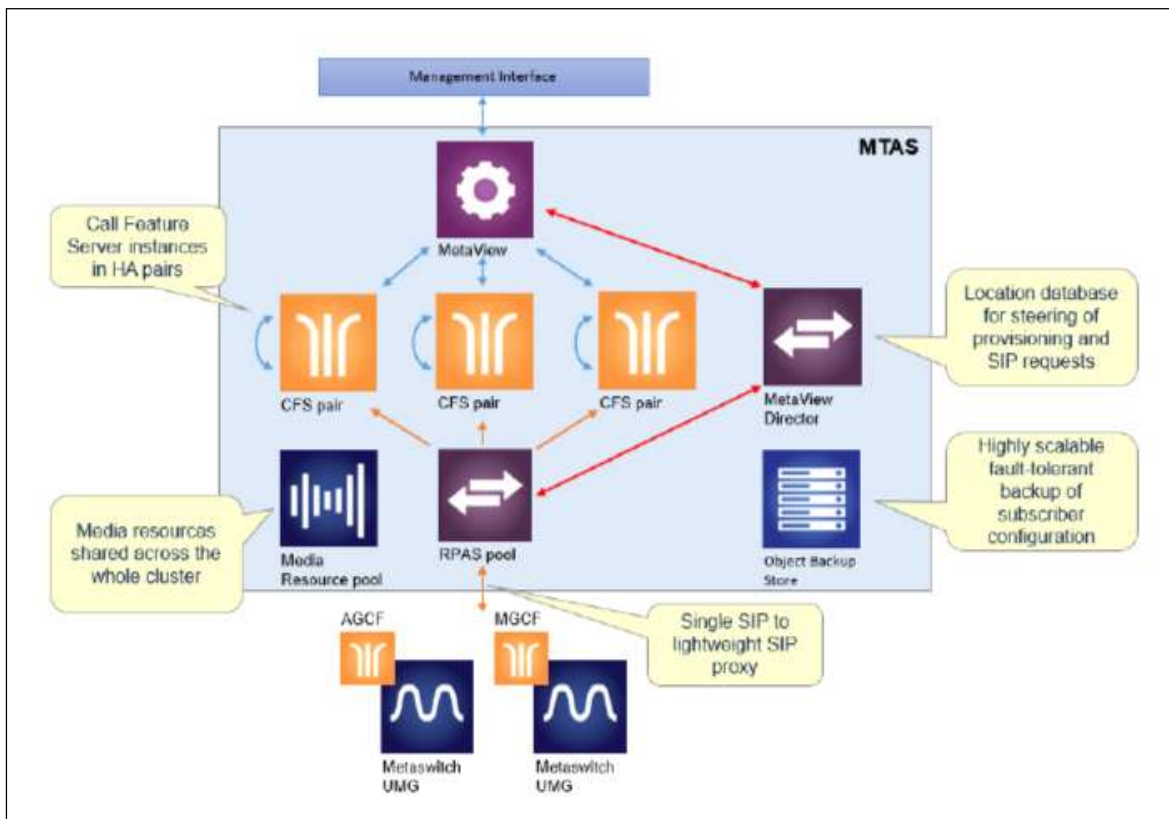
70. The MTAS communicates with a UMG to control “the entire end-user communications experience from establishing a call to adding or transferring rich media, such as video” and manages calls “across disparate user equipment and networks.” Exhibit J, at 1. The gateway products include a feature referred to as Emergency Standalone (ESA). Exhibits F and G, at 1.



71. Using ESA, the gateway products receive an indicator signal associated with time-sensitive data traffic in a network. For example, the gateway products detect critical network outages between a UMG and its MTAS. Exhibits F and G, at 1. The gateway products also access a database entry associated with the call agent in response to the indicator signal and reassigns control of the data traffic from the call agent to a second call agent by changing a database entry from an IP address associated with the call agent to a second IP address associated with a second call agent. For example, on information and belief, the gateway products change an IP address of the MTAS to an IP address of an ESA call agent upon detecting a network outage between the UMG and the MTAS.

72. As another example, the clustered MTAS includes “multi-site active-active redundancy” which facilitates “multi-site load-balanced geographic redundancy.” Exhibit K, Broadvoice and Metaswitch Build a Geo-Redundant Solution in the Cloud (2016), *available at*

<http://www.metaswitch.com/knowledge-center/case-studies/broadvoice-and-metaswitch-build-a-geo-redundant-solution-in-the-cloud>, at 3.



73. The clustered MTAS includes MetaView Director which includes a location database for steering of SIP requests and is in communication with UMGs and with multiple call feature server (CFS) pairs (i.e., call agents). Exhibit K, at 3.

74. The gateway products in combination with the clustered MTAS receive an indicator signal associated with time-sensitive data traffic in a network. For example, on information and belief, the MetaView Director receives an indication when a CFS pair is unavailable. The gateway products in combination with the clustered MTAS also access a database entry associated with the call agent in response to the indicator signal and reassigns control of the data traffic from the call agent to a second call agent by changing a database entry from an IP address associated with the call agent to a second IP address associated with a second call agent. For example, on information

and belief, the MetaView Director changes a database entry from an IP address of a first CFS to another CFS in response to the indication that first CFS is unavailable.

75. In view of the foregoing, Metaswitch and its customers infringe the '334 Patent in violation of 35 U.S.C. § 271(a).

76. On information and belief, both by configuring the Metaswitch gateway products or the gateway products in combination with the clustered MTAS to operate in a manner that infringes the '334 Patent and by encouraging customers to use the Metaswitch gateway products or the gateway products in combination with the clustered MTAS in a manner that infringes the '334 Patent, Metaswitch is inducing infringement of the '334 Patent by its customers in violation of 35 U.S.C. § 271(b). For example, Metaswitch's literature describes functionality of the Metaswitch gateway products and clustered MTAS that falls within the scope of the above-identified claims of the '334 Patent.

77. Ribbon has no adequate remedy at law for Metaswitch's acts of infringement. As a direct and proximate result of Metaswitch's acts of infringement, Ribbon has suffered and continues to suffer damages and irreparable harm. Unless Metaswitch's acts of infringement are enjoined by this Court, Ribbon will continue to be damaged and irreparably harmed.

78. Metaswitch has known of the '334 Patent at least as early as service of this Complaint. Additionally, the '334 Patent was brought to Metaswitch's attention during prosecution of Metaswitch's own patent, United States Patent No. 7,881,282. Thus, Metaswitch has been aware of the '334 Patent since at least May 6, 2010. Nevertheless, Metaswitch has continued its infringement of the '334 Patent with full knowledge of that infringement. Metaswitch's infringement of the '334 Patent has been willful, done deliberately and with full knowledge that the use of the Metaswitch gateway products and MTAS infringes the '334 Patent,

justifying an increase in the damages to be awarded to Ribbon up to three times the amount found or assessed, in accordance with 35 U.S.C. § 284.

79. Metaswitch's willful infringement of the '334 Patent renders this an exceptional case, justifying an award to Ribbon of its reasonable attorney fees, in accordance with 35 U.S.C. § 285.

Count V – Infringement of U.S. Patent No. 7,158,627

80. Ribbon incorporates by reference the allegations in the foregoing paragraphs.

81. The '627 Patent is directed to a softswitch executing on a computer that processes a plurality of calls and monitors at least one criteria associated with operation of the computer, and based on the monitoring, limits the number of calls processed by the computer. *See* '627 Patent, Abstract. The claimed systems and methods of the '627 Patent improve the operation of a softswitch using techniques that were not well-understood, routine, or conventional to a person of ordinary skill in the art at the time of the '627 Patent. For example, some embodiments prevent softswitch overload by monitoring relevant parameters of operation of the softswitch and its associated computer and, when overload is imminent, taking remedial action such as refusing additional calls, which results in a more reliable softswitch and thus more reliable telecommunications service. *Id.* at 2:5-17.

82. Metaswitch has known of the '627 Patent at least as early as service of this Complaint.

83. On information and belief, Metaswitch and its customers directly infringe one or more claims of the '627 Patent, either literally or under the doctrine of equivalents. Non-limiting examples of such infringement are provided below, based on the limited information currently available to Ribbon.

84. Claim 1 of the '627 Patent recites as follows:

A method of call processing comprising:

a packet switch fabric;

receiving, at a softswitch executing on a computer, a plurality of calls for switching, wherein the computer includes a processing system and a memory, and the softswitch has a plurality of signaling subsystems;

monitoring at least one criterion associated with operation of the computer, wherein the at least one criterion comprises the amount of usage of at least a portion of the processing system, the amount of usage of the memory, the number of the plurality of calls that are being processed by each of the plurality of subsystems, or any combination thereof; and

based on the monitoring, limiting the number of calls processed by the computer.

85. On information and belief, Metaswitch and its customers practice each and every limitation of at least Claim 1 when using Metaswitch's softswitch products, such as its Integrated Softswitches (e.g., its VP6010 and VP6050 products) and Distributed Softswitches (e.g., its Metaswitch Telephony Application Server (MTAS) combined with the MG6010 or MG6050 Universal Media Gateways (UMGs)). An example is described below.

86. The Integrated Softswitches are operable to perform call processing for a plurality of calls and a plurality of signaling subsystems. For example, the UMGs feature "an integrated signaling gateway, designed to transform circuit switched SS7 and ISDN messages for IP networks." Exhibits F and G, at 1. The UMGs support the following protocols.

PROTOCOLS

- Media Gateway Control: H.248 v1 and v2 / Megaco, MGCP 1.0bis
- Internet Protocol version 6 (IPv6) and Internet Protocol version 4 (IPv4)
- Session Initiation Protocol (SIP) v2
- T1 Channel Associated Signaling (CAS)
- SS7 Support: ANSI, ITU-T, ETSI and national variants
- ISDN PRI (ETSI, NI-2, Lucent and Nortel variants), NFAS
- PacketCable Network-based Call Signaling (NCS)
- GR-303
- TR-08 *
- Multi-Frequency (MF) trunks (1-way, 2-way)
- Ground start, loop start, E&M immediate/wink start
- V5.2 signaling *
- SIGTRAN (M2UA, M3UA and IUA) backhaul to gateway controller

87. The Integrated Softswitches “can be deployed as a signaling gateway, enabling cost-effective termination of SS7 signaling links anywhere within the network and transport of ISDN signaling messages . . . over IP.” Exhibits H and I, at 1. The Integrated Softswitches support the following protocols:

| PROTOCOLS |
|---|
| <ul style="list-style-type: none"> • Media Gateway Control: H.248 v1 and v2 / Megaco, MGCP 1.0bis • Signaling Gateway Control: M3UA and M2PA • Internet Protocol version 6 (IPv6) and Internet Protocol version 4 (IPv4) • Session Initiation Protocol (SIP) v2 • T1 Channel Associated Signaling (CAS) • SS7 Support: ANSI, ITU-T, ETSI and national variants • ISDN PRI (ETSI, NI-2, Lucent and Nortel variants), NFAS • PacketCable Network-based Call Signaling (NCS) • GR-303 • Multi-Frequency (MF) trunks (1-way, 2-way) • Ground start, loop start, E&M immediate/wink start • V5.2 signaling |

88. The softswitch products monitor at least one criterion associated with operation of the computer, such as the amount of usage of at least a portion of the processing system, the amount of usage of the memory, or the number of the plurality of calls that are being processed by each of the plurality of subsystems. For example, Metaswitch claims the UMG supports 6,000,000 busy hour call attempts. Exhibits F and G, at 2.

| SCALABILITY |
|--|
| <ul style="list-style-type: none"> • RT6701 RTMs and 6xCB1000: 288xT1/E1 • RT6703 RTMs and 2xCB1000 + 12xCB3000: 96xT1/E1 and 144xDS3 • RT6705 RTMs and 2xCB1000: 96xT1/E1 and 48xOC3/STM1 or 12xOC12/STM4 • 90,000 concurrent calls • Up to 6,000,000 Busy Hour Call Attempts (BHCA) |
| CARRIER-CLASS RELIABILITY |
| <ul style="list-style-type: none"> • GR-512-CORE (99.999% availability) • Redundant resource blades, Ethernet switch blades and shelf managers • Redundant, hot-swappable power supplies and fans • Fault-tolerant software architecture with calls preserved on resource blade failover • 1+1 APS for optical TDM • CB1000/CB3000 breakout panels provide passive Y-junction for copper TDM |

89. Thus, on information and belief, the UMGs are able to monitor the number of calls. Similarly, Metaswitch claims the Integrated Softswitches support 2.4 million busy hour call attempts. Exhibits H and I, at 2.

| |
|---|
| <p>SCALABILITY</p> <ul style="list-style-type: none"> • RT6701 RTMs and 6xCB1000: 288xT1/E1 • RT6703 RTMs and 2xCB1000 + 12xCB3000: 96xT1/E1 and 144xDS3 • RT6705 RTMs and 2xCB1000: 96xT1/E1 and 48xOC3/STM1 or 12xOC12/STM4 • Up to 2.4 million Busy Hour Call Attempts (BHCA) • Up to 600,000 Subscribers |
| <p>CARRIER-CLASS RELIABILITY</p> <ul style="list-style-type: none"> • GR-512-CORE (99.999% availability) • TDM and VoIP equipment protection switching • Redundant, hot-swappable interface cards, alarm cards, power supplies, fans, and processor cards • Fault-tolerant software architecture with calls preserved on CPU failover • 1+1 APS for optical TDM • CB1000/CB3000 breakout panels provide passive Y-junction for copper TD |

90. Thus, on information and belief, the Integrated Softswitches are able to monitor the number of calls.

91. The softswitch products limit the number of calls processed by the computer. For example, Metaswitch claims the softswitch products support carrier class reliability of 99.999%. Exhibits F through I, at 2. Thus, on information and belief, the softswitch products limit the number of calls prevent system failure.

92. In view of the foregoing, Metaswitch and its customers infringe the '627 Patent in violation of 35 U.S.C. § 271(a).

93. On information and belief, both by configuring the softswitch products to operate in a manner that infringes the '627 Patent and by encouraging customers to use the softswitch products in a manner that infringes the '627 Patent, Metaswitch is inducing infringement of the '627 Patent by its customers in violation of 35 U.S.C. § 271(b). For example, Metaswitch's

literature describes functionality of the softswitch products that falls within the scope of the above-identified claims of the '627 Patent.

94. Ribbon has no adequate remedy at law for Metaswitch's acts of infringement. As a direct and proximate result of Metaswitch's acts of infringement, Ribbon has suffered and continues to suffer damages and irreparable harm. Unless Metaswitch's acts of infringement are enjoined by this Court, Ribbon will continue to be damaged and irreparably harmed.

JURY DEMAND

95. Pursuant to Federal Rule of Civil Procedure 38(b), Ribbon hereby demands a trial by jury on all issues so triable.

PRAYER FOR RELIEF

WHEREFORE, Ribbon prays for judgment in their favor granting the following relief:

A. A finding that Metaswitch has directly infringed and/or induced others to infringe the asserted patents;

B. An award of damages pursuant to 35 U.S.C. § 284 adequate to compensate Ribbon for Metaswitch's infringement of the asserted patents, including both pre- and post-judgment interest and costs as fixed by the Court;

C. A permanent injunction against Metaswitch and its officers, agents, servants, employees, and representatives, and all others in active concert or participation with them, from further infringing the asserted patents and a royalty for any infringement not included in the jury's verdict;

D. A finding that Metaswitch's infringement of the asserted patents after the jury's verdict is willful;

E. An increase in the damages to be awarded to Ribbon of three times the amount found by the jury and/or assessed by the Court;

F. A declaration that this is an exceptional case within the meaning of 35 U.S.C. § 285, and a corresponding award of Ribbon's reasonable attorney fees incurred in connection with the litigation; and

G. Any additional and further relief the Court may deem just and proper under the circumstances.

Dated: March 8, 2018

Respectfully Submitted,

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